

COLORADO DEPARTMENT OF HEALTH
Radiation Control Division

INTER-OFFICE COMMUNICATION

TO : Tom Vernon
FROM : Albert J. Hazle

DATE : April 29, 1986
SUBJECT : PLAN Jeffco Response

Attached are copies of 2 draft documents. The first is a draft letter transmitting the document addressing their specific comments. The second draft is the document (draft #1) addressing their specific comments and issues.

I have hurriedly drafted both these documents because of the need to initiate remedial action during the coming month if indeed we are to accomplish anything this year. The other reason for the hurried effort is that I will be out of town on annual leave moving my mother and sister to the Denver area from May 10th to May 14th. On May 15th I leave for the annual meeting of the Conference of Radiation Control Program Directors (Charleston, WV) returning to Colorado on the Friday prior to the Memorial Day weekend.

I have taken the liberty of providing these draft documents to the individuals listed below as they or their agencies are or have been involved and some are referenced in the document draft #1.

The draft documents were prepared without references and supporting documents being available to the writer. By copy of this IOC, I am requesting input from the listed individuals in finalizing the documents by May 8th.

cc: Carol Welch, Hall & Evans COLO Attorney
Adonis Neblett, Attorney General's Office
Larry Hoyt, Jefferson County Attorney
Bob Lawrence, EPA Region VIII Attorney
Pat Currier, DOE/RFAD Attorney
George DiCero, Broomfield City Manager
Milt Lammering, Chief, ORP, EPA Region VIII
Chuck Illsley, Rockwell ✓
Gary Finstad, US Soil Conservation Service
Bob Arnott, CDH/OHP
Radiation Control Division Staff

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

ADMIN RECORD

SW-A-003901

1/12

DRAFT #1

DATE

John Litz, Chairman
PLAN Jeffco
c/o 11010 W. 29th Avenue
Lakewood, CO 80215

Dear Mr. Litz:

The Colorado Department of Health is in receipt of your letter dated April 25, 1986 regarding PLAN Jeffco's concern for the anticipated remedial action on lands in the Rocky Flats Plant environs that exceed the State's Plutonium-In-Soil Standard.

The referenced lawsuit settlement was discussed with the involved governmental entities during the settlement negotiations and the issues resolved prior to the settlement being finally ~~being~~ accepted by the parties and the court. ~~In fact,~~ The court issued a Findings of Fact and Conclusions of Law which addressed the anticipated remedial action. It was recognized by the parties to the lawsuit and the government entities that precautions would have to be taken to preclude soil erosion by water and wind following the reduction of the soil Plutonium concentration to below the State Standard.

Attached to this letter is a document specifically addressing the concerns included in your letter.

Following your review of our response, should you desire further information please do not hesitate to contact Al Hazle, his staff, or ~~myself~~.

me

Sincerely,

Thomas M. Vernon, M.D.
Executive Director

Enclosure

cc: List of recipients Litz to Vernon

#1 SPECIFIC RESPONSES TO ISSUES RAISED

PLAN JEFFCO LETTER DATED APRIL 25, 1986

With regard to the issue of reconciliation of the Colorado Plutonium-In-Soil Standard, this matter has been deliberated, reviewed and evaluated a number of times by individuals and entities having the expertise and the responsibility to address this matter. The Colorado State Board of Health established the standard in 1973 at the request of the Colorado Department of Health following hearings and the taking of testimony. Due to the controversial nature of the Rocky Flats Plant location and the contamination of its environment, the Board of Health revisited the subject of the standard, and each time reaffirmed that the standard was adequately protective of the public health and safety. In the review made by the Board in 1976 information was provided by the Department to the Board evaluating the potential radiation dose and health risk associated with continued occupancy by the public of lands contaminated at the Standard. The evaluation made by the Department and the EPA indicated impacts lower than the proposed but never adopted EPA Guidance for Transuranics in the Environment. Judge Matsch in issuing his Findings of Fact and Conclusions of Law as a result of hearings held by the court stated "From all the evidence now before this court, the general conclusion reached is the lands involved in this litigation are suitable for the development and use anticipated in the settlement agreements, and that the remedial measures to be undertaken are sufficient to assure that the affected populations will not be subject to any elevated risk of adverse health effects from such use and development." The EPA proposed guidance and the Colorado Standard are both well below the International Commission on Radiation Protection's dose equivalent limit of 0.05 sievert per year (which is equivalent to 5 rem per year considering the body as a whole rather than organs or parts thereof) reduced by a factor of 30 for application to the general public.

With regard to Issue #1 (page 2) the following is provided: Plowing (or rather soil mixing) is the only remedial action known to effectively reduce the soil concentration thereby reducing the potential radiation exposure from resuspended Plutonium. Removal of the top layer of soil was evaluated and was removed from consideration based on the extreme cost of such action and the negative environmental impact from such an effort. The effectiveness of plowing (soil mixing) has been demonstrated on lands involved in the settlement and conveyed to Broomfield and Jefferson County Open Space. Parcels of land that have undergone routine agricultural tillage illustrate a reduction of Plutonium soil concentrations by a factor of 100 from those of adjoining unplowed lands. As the lands transferred to local government entities under the terms of settlement agreement involved both tilled and untilled ground, the end result is a stabilized land surface area at levels at or below the State Standard which heretofore could not be achieved. From the Soil Conservation Service's soil management perspective, regardless of the Plutonium

concentration, the land should be left as is. From the perspective of the local government entity owner of the land, they would not accept transfer of the property without the commitment for remedial action down to or below the State Standard. The State Standard was used as it is the only directly applicable standard that has ever been promulgated and it is slightly more conservative (restrictive) than the proposed, but never adopted EPA guidance. Plowing (mixing) will be done under optimum soil/moisture conditions to preclude resuspension of the now diluted Plutonium soil concentration. As Plutonium has an affinity to attach to soil particles, its reintrainment to an air hazard and migration to groundwater under the remedial action plan is nonexistent. The Soil Conservation Service's primary concern for the Broomfield Island surface erosion by water (precipitation) which could result in some ~~remediated~~ soil (reduced concentrations) reaching the Great Western Reservoir and increasing the silt loading of the bottom of the reservoir. EPA had raised concern for remedial action in this area, not based on the hazard associated with the Plutonium concentration but on the potential wind and water erosion negative environmental impacts. Upon meeting with the entities involved in developing the remedial action plan for the Broomfield lands and understanding the participation of the Soil Conservation Service, their concerns have been mitigated. As stated before, the local government entities involved would not accept the settlement agreements without the stipulation that the lands contaminated in excess of the State Standard be remediated to levels at or below the Standard. If the lands were not remediated (and not occupied) resuspension of the surface soil having concentrations in excess of the Standard would continue as they currently do, placing a burden on the owner.

With regard to Issue #2 (page 2) the following is provided: The primary criteria contained in the proposed EPA transuranic guidance of 10 millirad to the lung in the 70th year, and 30 millirad to the bone surfaces in the 70th year will not be exceeded (See the Department's 1976 presentation to the State Board of Health). The proposed EPA guidance includes a soil screening value which was used by EPA in evaluating the Rocky Flats Plant environment. Both the 2 criteria and the screening value were calculated to protect the general public who might conceivably reside on such lands for a lifetime. The State Standard was established to protect the population at greatest risk, the site preparation workers, even though continuous residency of the general public was also considered. As stated before, the State Standard was selected as the criteria for the remedial action under the lawsuit settlement agreements because it was reasonably more conservative than the proposed but never adopted EPA guidance, the State Standard has been duly promulgated and is directly applicable. The Clean Air Act amendment promulgated regulations addressing radionuclides do not address Plutonium. The regulations that were proposed had the same criteria that ~~was~~ included in the EPA proposed transuranic guidance. As the proposed EPA guidance would not be exceeded, the draft proposed but not adopted CAA regulations on radionuclides would not be exceeded. As far as the water standards are concerned, the Broomfield potable water supply

including the Great Western Reservoir has never exceeded, during the Department's monitoring efforts, the EPA and the State primary and secondary standards with regard to materials from the Rocky Flats Plant, even when there was a direct connection between the industrial waste treatment plant at the Flats and the Great Western Reservoir. The major concern for water erosion on the Broomfield lands is silting of the reservoir reducing the reservoir's water storage capacity. ←

With regard to Issue #3 (page 2) the following is provided: To respond to this issue and its associated questions the relationships must first be understood. The settlement agreements entered into and approved by the court state that the US Department of Energy and its contractor(s) will perform the required remedial action to or below the State Standard. The State, in the person of the Colorado Department of Health, will assist and coordinate its evaluation of the remedial effort. The Soil Conservation Service was brought into the situation by the DOE contractor recognizing the nature of the Rocky Flats Plant environment. Both the EPA and the SCS have no regulatory or controlling role. The property owners, Broomfield and Jefferson County, as such have ultimate authority over their respective lands. The role of the State is to determine compliance with the State Standard in accord with the court approved settlement agreements and thereby release all entities from further obligations in this regard. Rockwell has committed to the taking of samples during remedial action efforts to determine the environmental impact, if any. If during the course of remedial action a situation arises that might have a negative impact, Rockwell would advise the owner and necessary steps would be taken to mitigate the situation. Jefferson County filed a position statement with regard to Judge Matsch's hearings which in part stated "In signing the Settlement Agreement and, indeed throughout Jefferson County's involvement with concerns surrounding the Rocky Flats Plant, the Board of County Commissioners has maintained that the Colorado Department of Health (hereinafter the "State") has the sole authority to set standards concerning radioactive elements in the environment and the County will follow the State's guidelines in this area. Thus, the commitment in the Settlement Agreement to bring the lands in question within the State standard is sufficient for Jefferson County as is the commitment that the uses proposed for the Plaintiffs' retained lands comply with the intent of the Traylor letter's "Area of Concern". While Broomfield was not a party to the lawsuit, it has supported and agreed to the use of the State Standard as being the appropriate criteria.

With regard to Issue #4 (page 3) the following is provided: As stated previously in this document, the State Plutonium-In-Soil Standard was evaluated both from the standpoint of the worker and continuous occupancy by the general public. Therefore the proposed uses identified do not present undue health risk to the individuals. The Soil Conservation Service's stated concerns are for the intensive use of irrigation and fertilizers and chemicals which might make the Plutonium more mobile in the soil system than it would normally be. While our knowledge may be incomplete in this specific area, they are advising some caution in the

intensive application of fertilizers and chemicals, which would also apply in a situation not involved with Plutonium. The use of recreational vehicles should be limited in their view due to damage to the fragile vegetal situation, not due to the Plutonium situation. Wind and water erosion currently occurs on this land. While remedial action will have to be accomplished in a very deliberate manner with some additional risk of erosion, the end result will be a very much improved situation over what currently exists. An example of this is the federal government land immediately to the west of the Jefferson County Open Space lands along Indiana Street. There are restrictions of use placed on the respective properties as stipulated in the Settlement Agreements. The additional restrictions as proposed by the Soil Conservation Service in the Remedial Action Plan would be binding on those entities who adopt such a plan of action.

With regard to Issue #5 (page 3) the following is provided: The Settlement Agreements involved are binding on the parties, and are part of Judge Matsch's approval of the settlement of the lawsuit. US DOE has committed to the accomplishment of the remedial action.

With the implementation of a comprehensive remedial action plan as proposed, with some possible amendments, and the reduction of Plutonium soil concentration to or below the State Standard, the citizens of the State of Colorado will be adequately and properly protected.

DRAFT #1

PLAN Jeffco

Jefferson County Citizens for
Planned Growth with Open Space



Dear Mr. Hazle:

We are supplying you with a copy of this letter because you need to be informed about the unresolved safety problems regarding plutonium-contaminated lands near the Rocky Flats Nuclear Weapons Plant.

The proposed "remedial" action to decrease the existing hazards is going to be initiated despite the fact that there is not sufficient information about the safety of the planned procedure.

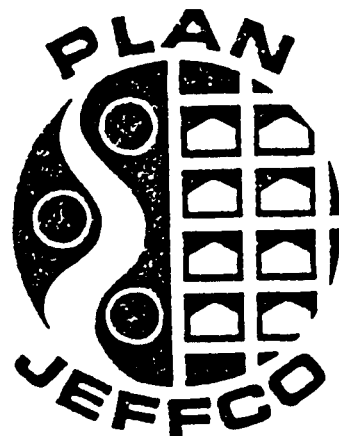
We request that you investigate the concerns expressed in the enclosed letter and take appropriate action.

Sincerely,

John Litz, Chairman
11010 W. 29th Avenue
Lakewood, CO 80215

PLAN Jeffco

Jefferson County Citizens for
Planned Growth with Open Space



April 25, 1986

Dr. Tom Vernon, Director
Colorado Department of Health
4200 E. 11th Avenue
Denver, CO 80220

Dear Dr. Vernon.

Some of the most contaminated land at Rocky Flats is going to be plowed this spring. We believe that there is not satisfactory knowledge about the safety of the procedure or adequate safeguards for this action to proceed.

PLAN Jeffco--the group that originated the Jefferson County Open Space program--has been attempting to learn about the plutonium-contaminated land lying adjacent to the Rocky Flats plant. Some of this land was purchased by Jefferson County with Open Space funds in a lawsuit settlement, some was purchased by Broomfield to be used as Open Space, and some was retained by private landowners for other uses.

We believe there are serious potential problems involving the Remedial Action Plan (RAP) to reduce plutonium levels on certain parcels of the land (through plowing, mixing, and reseed-ing) which have not been adequately addressed by the involved governmental entities. The RAP is scheduled to begin May 1986 It is imperative that these potential problems be resolved before any "remedial" action is taken

We believe that the RAP's criterion for selection of sites for plowing is very questionable. The criterion is the state limit of 2 disintegrations per minute per gram of dry soil (2/d/m/g/). However, the Colorado standard has not been reconciled with national and international limits which pertain to permissible body dosages.

From our research we have determined the following essential issues have not been resolved

1) Should the soil be plowed at all? Various individuals from the SCS (U S. Soil Conservation Service), the U S Environmental Protection Agency, and the city of Broomfield have all voiced serious concerns that plowing may make the lands more dangerous than they are now. An example of such serious concern is the following statement made by the SCS in its final recommendation dated April 23, 1985, signed by the District Conservationist:

"Our objective is to minimize wind and water erosion (and, hence, plutonium migration) during the remedial action process. Given the complex topography, the "difficult" soils, the unpredictable moisture conditions, and the strong local winds, this will not be easily achieved. With the exception of a few overgrazed, cropped or disturbed areas, the site already has a good cover of native grasses and is pretty well protected from erosion. If plowed, it may take quite some time to restore this cover. Any disturbance of these soils will promote wind and water erosion. For these reasons, from a soil management perspective, this land would be better off if left alone."

Is enough known about the effects of plowing so that the situation is not worsened by this action? Has this type of plowing been successful in other locations with similar conditions? Will not plowing disperse the plutonium by air, or leach it down into the groundwater because of the dust control measures (spraying with water)? Has adequate consideration been given to not plowing the contaminated land and merely securing the area so there is no human use (except as visual Open Space)?

- 2). Will the following federal guidelines be met.
 - a. human body radiation dose standards?
 - b. limitations on picocuries emitted from soil?
 - c. clean air standards?
 - d. clean water standards?

- 3). Which agency (the Colorado Department of Health, Rockwell International, U S Soil Conservation Service, U.S. Department of Energy, the U.S. Environmental Protection Agency, City of Broomfield, or County of Jefferson) has ultimate authority in case of foreseen or unforeseen problems. What potential problems are foreseen? What plans are there for dealing with them? What emergency measures have been developed? What will be done

and which agency has liability in case of accidents such as contamination of public water supplies?

4) What dangers will "secondary disturbance" of soil create after the RAP has been completed? Highway construction and maintenance, agricultural uses, public utilities, commercial and office buildings, a large target-shooting complex for public contest and military practice, and park recreation development have been suggested as possible potential uses for the properties. However, the SCS stated in its April 23, 1985 letter

"If this land MUST be disturbed to satisfy State Health Department standards, we strongly recommend that restrictions be placed on allowable future land uses . .

We do not recommend the use of these lands for purposes requiring irrigation. There are areas of steep slopes and shallow-to-shale soils which risk too much water erosion if used for irrigated crops. Turf-grass management--for parks or golf courses--raises additional concerns. Traditional lawn irrigation management applies much more water than necessary. In addition, turf grass uses generally mean the utilization of various chemicals--herbicides--pesticides, soil conditioners and fertilizers--to produce a thick green carpet. We are not convinced that enough is known about the potential impacts this kind of intensive, chemically-dependent land use might have on this land.

Recreational vehicle use, obviously, risks overuse and destruction of the fragile vegetal cover.

Use as non-irrigated cropland risks too much wind and water erosion. Even with good conservation practices we cannot eliminate all erosion, and during extended dry years, it is possible to lose soil at a rate of 70 tons per acre per year. . .or more."

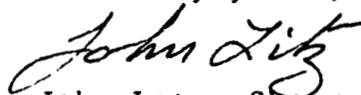
What enforcement mechanisms are there to insure that these uses NEVER occur on the subject property?

5) Is there a guarantee that there are sufficient funds for the RAP? What will happen if sufficient funds are not available through Rockwell to finish the RAP once it is started?

The State of Colorado has the responsibility for protecting the population affected by the operations of the Rocky Flats plant. However, even if all the stated scientific, well-intentioned guidelines are followed, and Colorado soil standards for radiation are not exceeded, these lands may still not be safe for human use. The remedial actions do not insure the safety of the citizens of Colorado. Therefore, we request that the Remedial Action Plan, and subsequent human use, not be implemented until all these questions are satisfactorily answered.

Please respond as soon as possible.

Sincerely yours,



John Litz, Chairman
11010 W. 29th Avenue
Lakewood, CO 80215

cc: Governor Richard Lamm
U S Senator Wm. Armstrong
U.S. Senator Gary Hart
U.S. Representative Patricia Schroeder
U.S. Representative Hank Brown
U.S. Representative Dan Schaefer
U.S. Representative Tim Wirth
Colorado State Senator Al Meiklejohn
" " Claire Traylor
" " Tom Glass
" " Kathy Arnold
" " Jim Lee
" " Joe Winkler
Colorado State Representative Marlene Fish
" " Bonnie Allison
" " Tony Grampas
" " Don Mielke
" " David Bath
" " Richard Mutzebaugh
" " Carol J. Taylor-Little
" " James Moore
" " James Scherer
Jefferson County Commissioners
Adams County Commissioners
Mayor and City Council of Broomfield
Mayor and City Council of Westminster
Mayor and City Council of Thornton
Mayor and City Council of Golden

Ray Printz, Director, Jefferson County Open Space
Bert Greg, Chairman, Jeffco Open Space Advisory Committee
Albert J. Hazle, Director of Radiation Control Division,
Colorado Department of Health
Charles T. Illsley, Rockwell International
U S Environmental Protection Agency
John Welles, Region VIII Administrator
Barry Levene
Bob Lawrence
John Brink
Phil Nyberg
Larry Hoyt, Jefferson County Attorney
Attorney Howard Holme
Rocky Flats Action Group
American Friends Service Committee
Physicians for Nuclear Responsibility